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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/893,493	06/29/2001	Alan F. Graves	08-891912US1	6350
7590 05/19/2006			EXAMINER	
Gowling Lafleur Henderson LLP			BELLO, AGUSTIN	
160 Elgin Street			ART UNIT	
Suite 2600			PAPER NUMBER	
Ottawa, ON K1P 1C3			2613	
CANADA			DATE MAILED: 05/19/2006	

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/893,493

Applicant(s)

GRAVES ET AL.

Examiner

Agustin Bello

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 17 February 2006.  
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1-26 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.  
10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.  
5) ☐ Notice of Informal Patent Application (PTO-152)  
6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 2/17/06 has been entered.

### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-6, 8-20, and 22-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hugenberg (U.S. Patent No. 6,714,545) in view of Hung (U.S. Patent No. 6,583,901).

Regarding claims 1, 16-20, 22-23, Hugenberg teaches a plurality of access multiplexers (reference numeral 28 in Figure 2), each access multiplexer operable to provide multiplexing of data packets from a plurality of end-users onto a wavelength according to a DWDM plan (column 7 lines 38-41); a photonic switch (reference numeral 40 in Figure 2), coupled to the access multiplexers via fiber optic cable (reference numeral 38 in Figure 2) for carrying the wavelengths, and operable to switch the wavelengths into dense wavelength division multiplexed (DWDM) signal for transmission (column 7 lines 38-41); and a core node (reference numeral 14 in Figure 2), coupled to the photonic switch (reference numeral 40 in Figure 2) via a fiber optic

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cable (reference numeral 24 in Figure 2) for carrying the DWDM signal, and operable to route the data packets within the communications network or out to a long haul network. Hugenberg differs from the claimed invention in that Hugenberg fails to specifically teach what the applicant refers to as an S-DWDM wavelength having an optical precision capable of being interleaved into the optical frequency constraints of a dense wavelength division multiplex wavelength plan used in the core network. However, Hung, in the same field of optical communication systems, teaches that providing a wavelength having an optical precision capable of being interleaved into the optical frequency constraints of a dense wavelength division multiplex wavelength plan used in the core network is well known in the art (see Figures 20-23, column 7 line 64 – column 8 line 2, column 9 lines 2-6, column 17 lines 45-49, 55-56). One skilled in the art would have been motivated to employ a wavelength having an optical precision capable of being interleaved into the optical frequency constraints of a dense wavelength division multiplex wavelength plan used in the core network in the device of Hugenberg in order to avoid exhausting the bandwidth of the fiber (column 2 lines 47-50 of Hung). Therefore, it would have been obvious to one skilled in the art at the time the invention was made to employ a wavelength having an optical precision capable of being interleaved into the optical frequency constraints of a dense wavelength division multiplex wavelength plan used in the core network as taught by Hung in the device of Hugenberg.

Regarding claims 2, 4, the combination of Hugenberg and Hung teaches that the photonic switch includes a multiwavelength source (reference numeral 1362 in Figure 2 of Hung) for generating DWDM quality wavelengths for supplying the access multiplexers with unmodulated wavelengths upon which to multiplex data packets.

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Regarding claims 3, 24, Hugenberg teaches that the core node includes a photonic switch and a packet switch (reference numeral 32 in Figure 2).

Regarding claim 5, Hugenberg teaches that the data packets are Ethernet packets (e.g. Ethernet throughout and as evidenced by Ethernet switch reference numeral 42 in Figure 2).

Regarding claim 6, Hugenberg teaches that a portion of the data packets are transmitted from a particular end-user to a particular access multiplexer over a local loop, connecting the particular end-user to the particular access multiplexer, using a digital subscriber line DSL protocol (column 3 lines 32-33).

Regarding claim 7, Hugenberg teaches that the type of DSL is VDSL (column 3 lines 32-33).

Regarding claims 8, 9, the photonic switches and core node of Hugenberg are clearly capable of switching at the wavelength, group of wavelength, and fiber level.

Regarding claim 10, the core node of Hugenberg is clearly capable of switching data packets based on a service to which the data packet pertains.

Regarding claim 11, Hugenberg teaches a plurality of photonic switches, each of the photonic switches connected to at least one other photonic switch and the core node (inherent in a larger overall system of Hugenberg).

Regarding claim 12, Hugenberg teaches a plurality of core nodes, each of core nodes connected to at least one other core node (inherent in a larger overall system of Hugenberg).

Regarding claims 13-15, 25 the combination of Hugenberg and Hung differs from the claimed invention in that it fails to specifically teach that the core node includes a wavelength converter for converting one wavelength to another wavelength to provide an end-to-end

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photonic connection across the network. However, the use of wavelength converters in optical communication networks is well known in the art. One skilled in the art would have been motivated to employ wavelength converters in order to allow interconnections between networks. Therefore, it would have been obvious to one skilled in the art at the time the invention was made to employ wavelength converts in the combination of Hugenberg and Hung.

Regarding claim 21, Hugenberg differs from the claimed invention in that Hugenberg fails to specifically teach that  $N$  is 40 and  $s$  is 5. However, being that the system taught by Hugenberg complies with DWDM standards, it is clear that one skilled in the art could have selected any number of channels and an associated channel spacing including a configuration of 40 channels with a spacing of 5.

Regarding claim 26, Hugenberg teaches that the photonic switch (reference numeral 40 in Figure 2) includes a first plurality of input ports and a second plurality of output ports, with the first being greater than the second, whereby the photonic switch effects concentration of the wavelengths from the access multiplexers (as seen in Figure 2).

### ***Response to Arguments***

4. Applicant's arguments with respect to claim 2/17/06 have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Agustin Bello whose telephone number is (571) 272-3026. The examiner can normally be reached on M-F 8:30-6:00.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on (571)272-3022. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

AB

  
**AGUSTIN BELLO**  
**PRIMARY EXAMINER**